



Spatial Science News from QUT: Industry Report-JULY 2010

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After over a year of scheduling and planning, the School of Urban Development has finally moved to S building at Gardens Point campus. The main department office is located on level 7 alongside most academic staff offices with the specialist labs (including mapping sciences) on level 6 alongside student services and teaching studios. The modern “renno” features open-plan design elements incorporating significant use of glass walls. Staff from spatial/surveying & mapping have been busy in recent weeks supporting promotional activities at Tertiary Studies Expo, the QUT Kelvin Grove Open Day during July and several high-school tours through the refurbished learning spaces. Semester 2 commenced 19th July and concludes 25th October followed by 3 weeks of examinations in November.

Survey Practical at Coombabah Range

Fourth-year QUT surveying students recently undertook a measurement comparison experiment at the Coombabah sewerage treatment plant (Gold Coast) pillared EDM calibration range as part of their practical requirements. A triple/quad/penta-occupation, real-time kinematic GPS survey was performed to check the 3-D measurement consistent between ambiguity resolutions of fixed location observations. Some precise leveling was also performed pillar to pillar to check/confirm heighting results. One of the learning objectives of this GPS campaign was to ensure the GPS measurement system plus techniques operated within the manufacturers’ specifications for positioning.

Post field-survey, the students have undertaken a detailed analysis of results against the techniques used and current EDM calibration certificate distances relating to pillars 1-4 only. Analysis of RTK-GPS control processing in Trimble’s Geomatics Office software demonstrated results generally better than the published manufacturers’ specifications. Additionally, a small detail/feature survey was undertaken using RTK survey methods with field feature coding of a hypothetical (simulated) vehicle accident on Shelter Road and adjacent area “evidence collection”. The benefits of a “rolling-wheel” below the rigid GPS pole using continuous data collection methods resulted in time efficiencies for field digitization of linear features, vehicle outlines, bus-tyre skid markings and natural surface features and other as-constructed features.



Figure 1: One of the four student survey teams undertaking a feature collection survey using Trimble R8-GNSS at Coombabah range (Photographer: Robert Webb)

Faculty of BEE Student Prizes Evening

The Faculty of Built Environment and Engineering Student Prize Ceremony was held at the end of July at the renovated Old Government House. These student prizes provide industry donors with the opportunity to be recognised within the university and broader community and offer potential collaboration between industry and QUT through student projects. For Students, the awards provide financial relief and in some cases enable students to complete valuable work experience with the sponsoring company.

Without the generous support of our sponsors, we would not be able to offer awards that encourage and reward the excellent academic achievements of our students. Teaching staff gratefully acknowledge this continuing support and dedication to recognise its sponsors at the BEE Student Awards ceremony. Staffs of the School of Urban Development sincerely thank the sponsors for their continuing support. A more detailed report will be available in the next edition.

Engaging Students in Real-World Learning at SERF- (Samford Ecological Research Facility)

Third-year Civil and Environmental Engineers students in the Bachelor of Engineering, and Surveying students in the Bachelor of Urban Development have taken part in an innovative project at the SERF site- Samford. The project involved a hydrological assessment based on a detailed catchment

analysis leading to the design of a new culvert over a tributary of Samford Creek. The project was formulated on the actual site conditions at QUTs' Samford research facility where the students have controlled access to the site and existing geographical, land-use and ecological characteristics and relevant data.

The project formed 25% of the unit assessment for both Water Engineering (engineers) and Cadastral & Land Management (surveyors). Professionals in each of these disciplines commonly work collaboratively, knowing each other's professional and technical limitations and requirements. This project enabled students to develop skills across discipline boundaries and was seed-funded by a QUT Small Teaching & Learning Grant in 2009, focusing upon improving student motivation and learning experiences. Staff involved in the on-going project are Associate Professor Les Dawes, Dr. Prasanna Egodawatta and Mr. Robert Webb, all from the School of Urban Development. The project included teams of students reviewing previously developed concept plans and included a subdivision layout and infrastructure (road and stormwater drainage) layout. Some key deliverables of this collaborative learning project were a detailed design of stormwater drainage (culvert), investigate the suitability of the proposed land development against hydrological and hydraulic scenarios and evaluate buffer zones provided for flood protection. This article also featured in the QUT Institute of Sustainable Resources- SERF May newsletter. <http://www.serf.qut.edu.au/about/newsletter/index.jsp>



Figure 2: QUT Civil Engineering and Surveying Students undertaking a creek cross-sectional profile survey up past the modelled Q-100 flood-line at Samford (Photographer: Robert Webb)

Alumni Activities

If you are a graduate, former staff member, or have enjoyed a close association with QUT, we welcome you back to the university through the QUT Alumni. QUT Alumni are able to keep in touch with what is happening at the University through the Alumni magazine QUT Links and alumni email monthly E-newsletter. Further information on keeping in touch, networking events in Australia and OS, benefits and services, awards and recognition can be found through the alumni website <http://www.alumni.qut.edu.au/>

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